

IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
AUSTIN DIVISION

CISCO SYSTEMS, INC.,

§

Plaintiff,

8

Civil Action No. 1:13-cv-00492-LY

V.

8

## INNOVATIVE WIRELESS SOLUTIONS, LLC,

38

## JURY TRIAL DEMANDED

Defendant.

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RUCKUS WIRELESS, INC.,

20

Civil Action No. 1:13-cv-00504-LY

Plaintiff,

8

V.

205

## JURY TRIAL DEMANDED

## INNOVATIVE WIRELESS SOLUTIONS, LLC,

§

Defendant.

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**DEFENDANT INNOVATIVE WIRELESS SOLUTIONS, LLC'S  
OPENING CLAIM CONSTRUCTION BRIEF**

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## I. INTRODUCTION

Defendant Innovative Wireless Solutions, LLC (“IWS”) respectfully submits this brief regarding the construction of disputed claim terms from IWS’s U.S. Patent Nos. 5,912,895, 6,327,264, and 6,587,473 (“the ‘895 patent,” “the ‘264 patent,” and “the ‘473 patent,” collectively “the patents-in-suit”)<sup>1</sup>. As explained below, IWS’s proposed constructions are consistent with the claim language and with the plain and ordinary meaning of the claim terms as used in the patents. In contrast, Plaintiffs’ proposed constructions violate many of the fundamental principles of claim construction. For example, Plaintiffs’ proposed constructions improperly rewrite claims and import limitations from preferred embodiments into the claim language, resulting in constructions that are inconsistent with the ordinary meaning of the disputed terms. Accordingly, the Court should adopt IWS’s proposed constructions because each of those constructions “stays true to the claim language and most naturally aligns with the patent’s description of the invention.” *See Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998).

## II. FACTUAL BACKGROUND

### A. Background to the Technology

In 1996, just as the commercialization of the Internet was beginning to take off and the Internet was welcoming more and more ordinary people, engineers at Northern Telecom, later known as Nortel Networks, filed a patent application addressing an important problem in moving to the connected world we live in today. This patent application resulted in U.S. Patent Nos. 5,912,895, 6,327,264, and 6,587,473, the three patents at issue in this litigation.

As the patents describe, in 1996, “[c]omputers and related devices [we]re increasingly being connected into networks between the devices,” which “resulted in a global information

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<sup>1</sup> Although IWS owns the patents-in-suit and is the party asserting infringement, IWS is the defendant in each of these actions because Plaintiff Cisco Systems, Inc. (“Cisco”) and Plaintiff Ruckus Wireless Inc. (“Ruckus”) (collectively, “Plaintiffs”) filed these declaratory judgment lawsuits seeking declarations of non-infringement and invalidity. (Case No. 1:13-cv-492, Dkt. No. 1; Case No. 1:13-cv-504, Dkt. No. 1.) IWS has responded by denying Plaintiffs’ claims and asserting counterclaims alleging infringement of the patents-in-suit. (Case No. 1:13-cv-492, Dkt. No. 20; Case No. 1:13-cv-504 Dkt. No. 19).

network which is generally known as the Internet.” (Ex. A at 1:13-24.)<sup>2</sup> This “typically” involved various layers of networks, such as “LANs (local area networks) which provide communications among devices within a relatively small geographic area,” and “different LANs being interconnected via MANs (metropolitan area networks) and WANs (wide area networks).” (*Id.* at 1:15-19.) One of the “most common” technologies for LANs at the time was “CSMA/CD, or Carrier Sense Multiple Access with Collision Detection technology.” (*Id.* at 1:25-28.) In particular, the patents discuss at length “Ethernet” or the “IEEE Standard 802.3,” the predominant form CSMA/CD technology. (*Id.* at 1:28-45.)

As described in the IEEE 802.3 Standard discussed in the patents-in-suit, CSMA/CD technology was originally created and used for connecting network devices to a communication channel where potentially more than one device could be transmitting at the same time. (Ex. A at 1:25-45, 7:66-8:22, Ex. D at 13, 31.) If two devices communicated on the channel at the same time (or at least overlapped) the transmissions could appear garbled to the intended recipient, a condition known as a collision. (*Id.*; Ex. E at 9, § 3.143.) Thus, CSMA/CD technology involves techniques compatible with connecting to networks, such as Ethernet networks, where a device that wishes to transmit on the network listens and checks to see if the channel is free for sending data. However, sensing if the channel is free is not enough, as messages take time to travel and two devices could start to send at the same time—resulting in a collision—even if they both sensed that the channel was free when they started transmitting. (Ex. D at 13, 30-32.) Accordingly, under CSMA/CD, while transmitting, the transmitter monitors for collisions. (Ex. A at 8:10-12.) If the channel is not free, or if a collision is detected during transmission, the transmitting device waits for a small amount of time and tries the whole process again. (Ex. A at 8:15-18, Ex. D at 13.) The flexibility that CSMA/CD provides—allowing devices to be added

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<sup>2</sup> All citations herein of the form “Ex. \_\_” are to the exhibits attached to the Declaration of Michael Saunders In Support of Defendant Innovative Wireless Solutions, LLC’s Opening Claim Construction Brief, filed contemporaneously herewith. The three patents-in-suit all share a common specification. For convenience, citations to the specification throughout this brief are to the ‘895 Patent’s specification, Exhibit A to the Saunders Declaration. Citations to the claims are to the individual respective patent, each of which is separately attached as an exhibit to the Saunders Declaration.

and removed from the network freely (Ex. A at 1:61-2:18)—made it a popular choice for local area networks, and CSMA/CD continues to be used for a number of different applications today.

### **B. The Problem Solved by the Patents-In-Suit**

In developing the inventions of the patents-in-suit, the Nortel engineers had a number of goals in mind. The Nortel engineers envisioned a world where “general-purpose computers,” “[n]etwork browser[s], game machine[s],” “entertainment device[s],” “workstations, printers, scanners, bridges, routers, etc.” “may be desired to connect to the Network” of the Internet. (Ex. A at 2:24-30.) They also wanted such access to be practical, i.e. “at relatively low cost both for equipment and ongoing services, that is not restricted to particular areas, and that provides high data rates.” (*Id.* at 3:24-28.)

Each of these goals could be accomplished with existing CSMA/CD technology, such as Ethernet. Indeed, one of the motivations for the invention was the Nortel engineer’s recognition that there were already many networks using “the most common” form of technology for local area networks—CSMA/CD. (*Id.* at 1:25-28.) However, those Nortel engineers recognized that CSMA/CD “can not be used” over all transmission mediums. (*Id.* at 2:38-42.) For example, CSMA/CD could not work over some transmission mediums because of “performance specifications, in particular a maximum delay” (*id.* at 2:6-7), “propagation delay” (*id.* at 8:31-35), or “signal attenuation” (*id.* at 8:35-38.) Thus, the problem that the Nortel engineers solved was connecting devices to a CSMA/CD network, such as Ethernet, over a medium for which CSMA/CD technology itself was not suitable.

Not surprisingly, the Nortel engineers, working at a telecom company, described the preferred embodiments of their invention in the context “a two-wire telephone wire.” (*Id.* at 2:33-40.) However, the engineers expressly acknowledged that these were only “particular embodiments of the invention” and that “it should be appreciated that numerous other modifications, variations, and adaptations may be made without departing from the scope of the invention as defined in the claims.” (*Id.* at 20:66-21:3.)

### III. LEGAL PRINCIPLES FOR CLAIM CONSTRUCTION

Claim construction is a matter of law reserved exclusively for the Court. *Markman v. Westview Instruments*, 517 U.S. 370, 391 (1996). It is a “bedrock principle” of patent law that the claims of a patent define the invention, and not its specification. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005). Accordingly, when determining the scope of the invention, “the analytical focus must begin and remain centered on” the language of the claims. *Gillette Co. v. Energizer Holdings, Inc.*, 405 F.3d 1367, 1370 (Fed. Cir. 2005). In particular, other claims of the same patent can be “valuable sources of enlightenment” as to the meaning of a claim term. *Phillips*, 415 F.3d at 1314. Of course, the claims are “read in view of the specification, of which they are a part.” *Id.* at 1315. Generally, however, it is a “cardinal sin” to read a limitation from the specification into the claims. *Id.* at 1320. Rather, a claim term should be given “its broadest ordinary meaning consistent with the written description.” *Int'l Rectifier Corp. v. IXYS Corp.*, 361 F.3d 1363, 1373-74 (Fed. Cir. 2004).

### IV. ARGUMENT

#### A. Disputed Claim Constructions

##### 1. “CSMA/CD”

Use in Claims	Plaintiffs’ Proposed Construction	IWS’s Proposed Construction
<u>‘895 Patent:</u> 1, 6, 7, 15, 16, 27-37, 40, 48, 51- 53	Plaintiffs contend that no construction is necessary.	
<u>‘264 Patent:</u> 5, 8	The acronym “CSMA/CD” is defined in the claims and specification as “Carrier Sense Multiple Access with Collision Detection.” This is an established protocol that is more appropriately explained by the parties’ experts than through a claim construction. Furthermore, IWS’ proposed construction does not accurately capture the meaning of “Carrier Sense Multiple Access with Collision Detection” and should not be adopted by the Court.	Techniques compatible with connecting to networks such as Ethernet networks, where a device that wishes to transmit on the network listens and checks to see if the channel is free for sending data. If the channel is not free, or if a collision is detected during transmission, the device waits for a small amount of time and tries again.
<u>‘473 Patent:</u> 1, 10, 11, 17, 18, 25, 26, 30, 32, 33, 35, 39- 42		

As is apparent, the parties both agree that CSMA/CD is not a term readily understood by the jury and therefore requires explanation. The central dispute is whether the term

“CSMA/CD” should be construed through claim construction, as proposed by IWS, or by the jury after hearing expert testimony at trial, as proposed by Plaintiffs. The law is clear: “courts construe patent claims as a matter of law and should not give such task to the jury as a factual matter.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 978 (Fed. Cir. 1995) (en banc). For the reasons set forth below, the Court should adopt IWS’s proposed construction as supported by the specification and the IEEE 802.3 Standard cited therein.

The specification makes clear that the patents’ use of “CSMA/CD” refers to CSMA/CD technology for connecting to networks, such as that described in the original Ethernet Standard or the IEEE 802.3 Standard. Indeed, the patent explicitly teaches:

Different technologies can be used to facilitate communications on any LAN and throughout the Network, the most common being Carrier Sense Multiple Access with Collision Detection (CSMA/CD) technology. This is documented in IEEE Standard 802.3 entitled “Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications” which has been adopted by the International Organization for Standardization (ISO). The 802.3 Standard is based on the 1985 Version 2 Standard for Ethernet and, although there are some differences including different use of a length/type field, the two Standards are largely interchangeable and can be considered equivalent as far as this invention is concerned. **The term “CSMA/CD” is used herein to refer generically to this technology.**

(Ex. A at 1:25-39 (emphasis added).) Moreover, the patents clarify that this use of “CSMA/CD” to “refer generically to this technology” means using techniques compatible with connecting to such networks, stating that: “[a]ny terminal device connected to a CSMA/CD LAN can transmit a frame to the LAN (Multiple Access) in accordance with a contention scheme.” (*Id.* at 8:4-6.)

The specification also supports that in CSMA/CD, “a device that wishes to transmit on the network listens and checks to see if the channel is free for sending data” and “if the channel is not free, or if a collision is detected during transmission, the device waits for a small amount of time and tries again.” Indeed, the specification itself “summarize[es]” the CSMA/CD methodology consistent with this construction:

Any terminal device connected to a CSMA/CD LAN can transmit a frame to the LAN (Multiple Access) in accordance with a contention scheme which is summarized by the following steps:

1. Monitor the LAN (Carrier Sense).
2. When the LAN is idle, transmit.

3. While transmitting, monitor the LAN for a collision (Collision Detection) by comparing transmitted bits with what is received from the LAN.
4. When a collision is detected, continue transmitting for a short period so that all TDs on the LAN detect the collision (this is referred to as jamming). Wait a random period of time determined by a binary exponential back-off algorithm, then return to step 1 for retransmission.

(Ex. A at 8:4-18.) Additionally, the 802.3 standard, which is part of the intrinsic record because it was cited and discussed in the specification (*Id.* at 1:28-44), also supports IWS's construction.

*See Phillips*, 415 F. 3d at 1317. The IEEE 802.3 Standard explicitly teaches:

The Carrier Sense Multiple Access with Collision Detection (CSMA/CD) media access method is the means by which two or more stations share a common bus transmission medium. To transmit, **a station waits (defers) for a quiet period on the medium (that is, no other station is transmitting)** and then sends the intended message in bit-serial form. **If, after initiating a transmission, the message collides with that of another station**, then each transmitting station intentionally send a few additional bytes to ensure propagation of the collision throughout the system. **The station remains silent for a random amount of time (backoff) before attempting to transmit again.**

(Ex. D at 13 (emphasis added).) Thus, "CSMA/CD" refers to a technique where a device that wishes to transmit on the network listens for a quiet period on the medium, where the channel is free for sending data. If the channel is not free, or if a collision is detected during transmission, the device waits for a small amount of time before attempting to transmit again. Because the intrinsic record supports IWS's construction of "CSMA/CD," it should be adopted by the Court.

## 2. "CSMA/CD interface"

Use in Claims	Plaintiffs' Proposed Construction	IWS's Proposed Construction
'895 Patent: 1, 6, 7, 15, 16, 27-37, 40, 48, 51- 53	an interface to a CSMA/CD path or terminal device	IWS contends that the plain and ordinary meaning in the field governs the construction of this term. Moreover, this phrase should not be construed in its entirety as proposed by Plaintiffs because an ordinary juror can understand the word "interface."
'264 Patent: 5, 8		For purposes of jury comprehension, IWS proposes the following construction: <u>"CSMA/CD"</u> : See above.
'473 Patent: 1, 10, 25, 26, 30, 35, 39-42		

There are two disputes as to this term. The first dispute is whether this term should be construed at all. IWS contends that the Court should only construe CSMA/CD, as argued above

(*supra* at 4), and that no construction is needed as to “interface,” an ordinary word in the English language. If the Court construes CSMA/CD, no further construction of “CSMA/CD interface” is required because “interface” is a commonly understood word with a widely accepted meaning.

The second dispute arises if the Court is inclined to construe “CSMA/CD interface.” As properly understood, this claim term merely requires an interface that is capable of connecting to CDMA/CD technology. For example, the claim term would be satisfied by a device with an Ethernet interface port that is *capable* of being connected to an Ethernet network, but does not require that the interface actually be connected to an Ethernet network or connected to a terminal device to fall within the scope of the claim. However, the problem with Plaintiffs’ proposed construction is that the use of the phrase “interface to a CSMA/CD path or terminal device” might be misinterpreted to require an actual connection to such a path or device rather than merely requiring an interface that is capable of connecting to such a path or device.

Plaintiffs’ construction is also improper because it imports the limitation from the preferred embodiments that the CSMA/CD interface must be to a CSMA/CD path or CSMA/CD terminal device, rather than to other embodiments of CSMA/CD technology. However, the specification does not limit CSMA/CD interfaces to those examples. Instead, it says that the “interface *can comprise* a CSMA/CD interface to a CSMA/CD path, or it *can comprise* a direct interface to a terminal device.” (Ex. A at 6:23-25 (emphasis added).) Thus, Plaintiffs’ construction is guilty of committing the “cardinal sin” of claim construction. Indeed, rather than actually construing the language of the term “CSMA/CD interface,” Plaintiffs’ construction actually *repeats* the words “CSMA/CD” and “interface” and adds additional words—“path” and “terminal device”—which have no textual basis in the term “CSMA/CD interface.” This attempt at rewriting the claim, rather than construing it, is clearly improper.

Because Plaintiffs’ construction is unnecessary, ambiguous, and unduly narrow, the Court should decline to construe this term.

### 3. “bidirectional communications path” / “communications path”

Use in Claims	Plaintiffs’ Proposed Construction	IWS’s Proposed Construction
‘895 Patent: 1, 3-12, 15, 17-20, 27-37	a wired communications path for exchanging information between two endpoints	IWS contends that the plain and ordinary meaning in the field governs the construction of these terms. Moreover, these phrases should not be construed in their entirety as proposed by Plaintiffs because an ordinary juror can understand the English words and grammar in them.
‘264 Patent: 5, 6, 7, 8, 9		
‘473 Patent: 1, 3, 4, 7-9, 11, 15, 17-19, 22-24, 26, 30-35, 37, 38, 40, 41, 42		If the Court believes a construction of “bidirectional” is necessary for the purposes of jury comprehension, then IWS proposes: <u>“bidirectional” / “bidirectionally”</u> : Capable of transmission in either or both directions.

The central dispute concerning these terms is whether the “communications path” should be limited to a “wired” communications path. There is no reasonable dispute that the plain and ordinary meaning of “communications path” is not limited to a wired path. Thus, the issue is whether the disclosures of the specification require narrowing the construction of this term from its plain and ordinary meaning. Because the patentee did not act as his own lexicographer or otherwise disavow claim scope, the claims should receive their “broadest ordinary meaning consistent with the written description.” *Int’l Rectifier Corp. v. IXYS Corp.*, 361 F.3d 1363, 1373-74 (Fed. Cir. 2004). Thus, the Court should decline Plaintiffs’ request to add the word “wired” into the claims.

#### a. The Intrinsic Record Supports IWS’s Proposed Construction

The intrinsic record establishes that “communications path” should obtain its broad ordinary meaning, not the artificially narrow construction proposed by Plaintiffs.

The claim language itself shows that the term “communications path” should be construed to have its plain and ordinary meaning. For example, independent claim 1 of the ‘895 Patent recites “A method of providing communications with a CSMA/CD … network via a bidirectional communications path,” and independent claim 48 recites “A network access arrangement for providing communications with a CSMA/CD … path via a communications

path.” (Ex. A at 21:5-7, 25:52-54.) Similarly, independent claims 5 and 8 of the ‘264 patent and independent claims 1, 11, 26, 30, 35, and 40 of the ‘473 Patent all recite “a communications path” or “a bidirectional communications path” without further limitation. Although each of the asserted claims recites a variety of different components and configurations, none recite the “wired” requirement that Plaintiffs advocate.

By contrast, independent claim 42 of the ‘895 Patent recites “a two-wire telephone subscriber line” in lieu of reciting a communications path. (Ex. A at 25:3-6.) Similarly, independent claims 56 and 71 of the ‘895 Patent recite “a two-wire line.” (Ex. A at 26:51-52, 28:28-30.) Further, independent claims 1 and 3 of the ‘264 Patent recite, “wherein the communications path comprises a two-wire telephone subscriber line.” (Ex. B at 19:27-28 and 62-63.) Thus, the patentee intentionally limited certain claims to a wired communication path while drafting other claims broadly to cover any type of communication path. Moreover, Plaintiffs’ construction would render that language in claims 1 and 3 completely superfluous.

*TurboCare Div. of Demag Delaval v. General Elec.*, 264 F.3d 1111, 1123 (Fed. Cir. 2001) (claim terms should not be read to contain a limitation “where another claim restricts the invention in exactly the [same] manner”); *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1333 n.3 (Fed. Cir. 2006) (“[T]he use of two terms in a claim requires that they connote different meanings. . . .”). Likewise, dependent claims 13, 21, 23, and 25 of the ‘895 Patent, dependent claims 6, 21, 27, and 28 of the ‘473 Patent also recite the “two-wire line” limitation. (Ex. A at 22:24-33, 23:1-10, 16-26, and 32-41; Ex. C at 20:12-13, 22:13-15, and 23:12-19.) Indeed, claim 6 of the ‘473 Patent merely claims, in its entirety, “6. A method as claimed in claim 1, wherein the bidirectional communications path comprises a two-wire line,” and would thus be rendered entirely superfluous under Plaintiffs’ construction. (Ex. A at 20:12-13.) Thus, the claims explicitly contemplate that “communications path” is broader than a “two-wire line.” *See Phillips*, 415 F. 3d at 1315 (“the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim”).

Construing “communications path” according to its plain and ordinary meaning is also consistent with the specification. The specification explicitly teaches that the wired communications path is merely a preferred embodiment:

It is known to provide for access to the Network from a relatively distant terminal device, or TD, via a communications path between a router on the Network and the distant TD, the communications path *typically* being constituted by a telephone line.

*A simple form of such a communications path* is a serial link comprising modem communications via a conventional two-wire telephone line.

(*E.g.*, Ex. A at 2:33-40 (emphasis added).) Thus, although the preferred embodiment is the *typical* two-wire telephone line, the patent itself acknowledges that the communications path can be broader than that and does not disavow any such *non-typical* communications paths from the scope of the claims.

**b. Plaintiffs’ Litigation-Driven Construction Attempts to Limit the Claims to Examples in the Specification and Should Be Rejected**

Plaintiffs’ proposed construction again commits the “cardinal sin” of claim construction by limiting an otherwise broad claim term to examples in the specification. *See Phillips*, 415 F.3d at 1320 (reading into the claims a limitation appearing only in examples in the specification is the “cardinal sin” of claim construction) (internal citations omitted).

Plaintiffs’ construction relies on descriptions of exemplary embodiments in the specification. For instance, Plaintiffs rely on Figures 1, 3, 4, 6, 8, and 15 of the ‘895 Patent as well as the corresponding descriptions in the specification. (No. 13-cv-492, Dkt. No. 41 at 3.) However, the specification merely describes these Figures as preferred embodiments:

FIG. 1 schematically illustrates **a known** Network access arrangement;

...

FIG. 3 schematically illustrates a Network access arrangement **in accordance with an embodiment** of this invention;

FIG. 4 schematically illustrates a Network access arrangement, providing for simultaneous telephone communications, **in accordance with another embodiment** of this invention;

...

FIG. 6 shows a graph illustrating frequency characteristics **related to the arrangement of FIG. 4**;

...

FIG. 8 schematically illustrates a slave modem provided **in the Network access arrangements of FIGS. 3 and 4**;

...  
FIG 15, which is on the same sheet as FIG. 8, schematically illustrates a combined unit which replaces a slave modem and Ethernet interface **provided in the arrangement of FIG. 3.**

(Ex. A at 6:41-67 (emphasis added).) Plaintiffs' construction seeks to read in limitations from what are clearly embodiments of the invention and the prior art.

Numerous Federal Circuit cases hold that such a limiting construction is improper. *See, e.g., Douglas Dynamics, LLC v. Buyers Prods. Co.*, 717 F.3d 1336, 1342 (Fed. Cir. 2013) (“While claim terms are understood in light of the specification, a claim construction must not import limitations from the specification into the claims”) (internal quotation marks omitted); *Linear Tech. Corp. v. ITC*, 566 F.3d 1049, 1058 (Fed. Cir. 2009) (“We have repeatedly held that, even in situations when only one embodiment is disclosed, the claims generally should not be narrowed to cover only the disclosed embodiments or examples in the specification.”); *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1117 (Fed. Cir. 2004) (“particular embodiments appearing in the written description will not be used to limit claim language that has broader effect”).

Although courts sometimes recognize a limited exception to the above rule where the specification expressly limits the scope of the invention to the disclosed embodiments, no such limitation exists here. In this case, although the primary examples in the patents relate to two-wire telephone lines, the patents disclose a broader definition consistent with the ordinary meaning of “communications path.” (See Ex. A at 2:33-40.)

If the Court believes a construction of “bidirectional” is necessary for the purposes of jury comprehension, then IWS proposes “capable of transmission in either or both directions.” (See Ex. G.)

#### 4. “information frame”

Use in Claims	Plaintiffs’ Proposed Construction	IWS’s Proposed Construction
‘895 Patent: 3, 4	Plaintiffs contend that no construction is necessary.	A group of bits transmitted over a network as a unit which includes a data field.
‘473 Patent: 2, 12, 36	The meaning of this term is readily understood in the context of the specification and the claims.  Alternatively, to the extent the Court believes a construction is necessary, Plaintiffs, propose “a group of bits that represent information and are transmitted over a network as a unit”	

There are two issues: whether information frame should be construed at all, and if it is construed, whether an “information frame” must include a data field.

As to the first dispute, without a construction from the Court, an ordinary juror is unlikely to understand that, in networking, a frame is “a group of bits” which “are transmitted over a network as a unit”—part of the construction of “information frame” which all parties agree.

As to the second dispute, the intrinsic record teaches that an information frame is a particular type of frame that contains a data field. The specification states that: “FIG. 2 illustrates the Ethernet frame at the MAC layer. It consists of, in order. . . a data field of 46 to 1500 bytes.” (Ex. A at 7:44-50.) Moreover, in the IEEE 802.3 standard, the data field is a payload of the information from higher networking layers, such as the LLC layer, and contains the data that users and applications on a network want to transmit. (Ex. A Fig. 2, Col. 1:50-60, 2:15-19; Ex. D at 23-24, 26-27, 29.)<sup>3</sup> However, the specification also teaches that certain frames, called “control frames” are frames which have no data field and are sent for control purposes. (Ex. A at Fig. 11, Col. 13:45-50.) Thus, the dispute is whether “information frame” is a term that describes only frames which contain a data field, or whether it describes any type of frame, including control frames.

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<sup>3</sup> As discussed above, the IEEE 802.3 standard is intrinsic evidence because it is cited and discussed in the specification of the patents-in-suit.

It is obvious from the phrase “*information* frames” itself that information frames are meant to carry *information* across the network, i.e. they have a data field. If the patentees meant any type of frame, they would have used simply used the term “frame” instead of the term “information frame.” Moreover, the specification itself confirms that “information frames” have such a data payload: “[t]he information packets can be communicated by enveloping them in information frames which also comprise error check fields for error checking of at least the enveloped information packets.” (*Id.* at 3:57-61.) Thus, the Court should adopt IWS’s proposed construction of “information frame.”

**5. “enveloping information packets in information frames” and  
“enveloping information corresponding to at least one of the [...] information packets in at least one [...] information frame”**

Use in Claims	Plaintiffs’ Proposed Construction	IWS’s Proposed Construction
<u>‘895 Patent:</u> 3	encapsulating intact Ethernet frames containing information packets in information frames	IWS contends that the plain and ordinary meaning in the field governs the construction of these terms.
<u>‘473 Patent:</u> 2, 12, 36	encapsulating an intact Ethernet frame containing at least one information packet in one information frame	Moreover, these phrases should not be construed in their entirety as proposed by Plaintiffs. Rather, only words or terms that an ordinary juror could not understand should be construed.

For the purposes of jury comprehension, IWS proposes the following constructions:  
“information packets”: A unit of data for transmission over networks of some finite size and which may be transmitted over a network by being enveloped in one or more frames.  
“information frames”: *See* above.

The primary disputes concerning these terms are whether, as Plaintiffs advocate, they should be rewritten to add the following additional limitations: (i) Ethernet frames, (ii) that the “information packets” of the claims be “contain[ed]” in those Ethernet frames, (iii) that the Ethernet frames are then “encapsulat[ed]” in the “information frames” of the claims, (iv) that the Ethernet frames be “intact” when they are in encapsulated in the information frames, and (v) as to the second term, that “at least one information frame” be rewritten to “one information

frame.” IWS contends that Plaintiffs’ constructions are nothing more than an improper attempt to rewrite the claims to add additional limitations, and that no construction is necessary except for the terms “information packets” and “information frames.” As to those terms, IWS acknowledges that the jury may not understand them without construction and therefore proposes constructions consistent with their ordinary meaning. For the reasons set forth below, the Court should adopt IWS’s plain meaning constructions and reject Plaintiffs’ narrow constructions.

**a. Plaintiffs’ Litigation-Driven Construction Attempts to Add Limitations Inconsistent with the Language of the Claims and Should Be Rejected**

Plaintiffs’ proposed construction again commits the “cardinal sin” of claim construction by limiting an otherwise broad claim term to examples in the specification. *See Phillips*, 415 F.3d at 1320 (reading into the claims a limitation appearing only in examples in the specification is the “cardinal sin” of claim construction) (internal citations omitted). Moreover, Plaintiffs go beyond merely importing limitations of preferred embodiments into the claims and instead violate the doctrine of rewriting claims by inserting additional limitations without any textual basis for their presence. *K-2 Corp. v. Salomon SA*, 191 F. 3d 1356, 1364 (Fed. Cir. 1999) (“Courts do not rewrite claims; instead, we give effect to the terms chosen by the patentee.”); *NTP, Inc. v. Research in Motion, Ltd.*, 392 F.3d 1336, 1363 (Fed. Cir. 2004) (“Our case law requires a textual ‘hook’ in the claim language . . . Without any claim term that is susceptible of clarification by the written description, there is no legitimate way to narrow the property right. In other words, ‘there must be a textual reference in the actual language of the claim with which to associate a proffered claim construction.’”). That is obvious because Plaintiffs’ construction contains nearly all the same words as the claim terms themselves—“information packets,” “information frames,” and “in”—as well as a blatant synonym—“encapsulating” for “enveloping,” but go on to add wholly new limitations—“Ethernet frame(s)” encapsulated within the information frames but also containing information packets. There is simply no textual hook in the claim terms for inserting “Ethernet frames” into the claim language as a third data structure sandwiched between the “information packets” and “information frames.” Even if

there were a textual hook in the claim for “Ethernet frames” there is certainly no basis in the claims or in the specification that those Ethernet frames be “intact.”

Similarly, Plaintiffs also blatantly attempt to rewrite the claims by changing the phrase “at least one [...] information frame” to “one information frame.” Of course, “at least one” means what it says: “at least one,” i.e., one or more, and is not the same thing as “one.” Once again, it is simply improper to rewrite the claims to contradict what they say.

**b. Plaintiffs’ “Intact Ethernet Frame” Construction Also Violate the Doctrine of Intra-Claim Differentiation**

Moreover, the intrinsic record establishes that Plaintiffs’ construction would violate the doctrine of intra-claim differentiation. Under this doctrine, courts generally reject constructions of terms that “render[] other parts of the claim superfluous,” as “a claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.” *Merck & Co. v. Teva Pharmaceuticals USA*, 395 F. 3d 1364, 1372 (Fed. Cir. 2005).

Claim 3 of the ‘895 Patent recites “enveloping information packets in information frames, the information frames **also comprising** error check fields for error checking of at least the enveloped information packets.” (Ex. A at 21:44-50 (emphasis added).) Similarly, claim 2 of the ‘473 Patent recites “enveloping information corresponding to at least one of the [...] information packets in at least one [...] information frame, the at least one information frame **further comprising** at least one error check fields for error checking of at least the enveloped information corresponding to at least one of the information packets.” (Ex. C at 19:52-60 (emphasis added).) Claims 12 and 36 of the ‘473 contain similar language. (See Ex. C at 21:16-33, 25:3-11.)

All of these limitations would be rendered superfluous by Plaintiffs’ proposed construction’s “intact Ethernet frame” limitation. An “intact Ethernet frame” has a “frame check sequence,” which is a type of error check field, for the data field of the frame. (See Ex. A at FIG. 2 and 7:44-54.) Where the information frame is enveloping an information packet, as presented in the claims, the packet is located in the data field of the information frame. Thus, the frame check sequence would be an error check field for the encapsulated information packet.

Thus, an intact Ethernet frame which is encapsulated in an information frame, as Plaintiffs' construction requires, would already include "error check fields for error checking of at least the enveloped information packets" in that Ethernet frame. Thus, the language of the claims reciting the requirement for an "error check field" would be rendered superfluous by Plaintiffs' construction.

If the Court believes a construction of "information packets" is necessary for the purposes of jury comprehension, then IWS proposes "A unit of data for transmission over networks of some finite size and which may be transmitted over a network by being enveloped in one or more frames." (Ex. A Fig. Col. 2, 1:26-65, 3:57-61 ("...The information packets can be communicated by enveloping them in information frames...."; Ex. F at 66, § 3.1566 ("packet. A unit of data of some finite-size that is transmitted as a unit . . .").)

## 6. "control information"

Use in Claims	Plaintiffs' Proposed Construction	IWS's Proposed Construction
'895 Patent: 1, 4, 5, 48	information provided in a data or control frame by the [master modem/first end/first modem/ control unit/ control unit of the first unit/another apparatus] that dictates when information can be communicated over the communications path	IWS contends that the plain and ordinary meaning in the field governs the construction of this term.
'264 Patent: 5, 8		Moreover, this phrase should not be construed because an ordinary juror can understand all of the words in it, which are ordinary words in the English language.
'473 Patent: 1, 11, 14, 16, 26, 30, 31, 35		

IWS contends that "control information" needs no further construction as the term is governed by the ordinary meaning of those words, and because further explanations as to what the control information is and does are already provided in the remaining limitations of the respective claims in which the term appears. Plaintiffs' proposed construction of "control information" unduly narrows the term from its ordinary meaning and imposes an additional limitation that finds no support in the specification or in any cited evidence—that the control information "dictates" when information can be communicated over the communications path.<sup>4</sup>

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<sup>4</sup> Plaintiffs also improperly narrow the claims by importing the limitation of the preferred embodiments that the control information be "provided in a data or control frame." Indeed,

IWS does not dispute that the recited “control information” provides information used to control the timing of transmissions. That is clear from the patent’s repeated description of “control information.” The patent describes that “control information” is a type of “[i]nformation relating to operation of [] modems” (Ex. A at 3:61-67), “such as operating parameters for [a] slave modem” (*id.* at 14:57-65.) The patent also explains that “control information” is preferably used to provide the half duplex communication “to avoid collisions or interference between information packets communicated in the two directions of communication on the communications path.” (*Id.* at 3:33-57.)

However, nothing in the patent suggests that the control information “dictates” when information can be transmitted. Indeed, “dictate” does not appear *anywhere* in *any* of the patents. Also, “dictate” is not a technical term in the field of networking with a well understood meaning. It appears that Plaintiffs have chosen the term “dictate” to imply that the control information has some sort of absolute or complete control over the timing of the transmission of information. However, that is inconsistent with the language of the claims themselves. Indeed, each and every claim at issue already has its own specific and unique language describing how the control information affects the other components of that claim. For example,

- Claim 1 of the ‘895 Patent: “supplying information packets from the third buffer to the communications path **in dependence upon the control information**” (Ex. A at 21:5-37 (emphasis added).)
- Claim 5 of the ‘264 Patent: “producing **control information** for controlling **another apparatus** coupled to the communications path **so that communications** via the communications path **take place in a half duplex manner.**” (Ex. B at 20:12-30 (emphasis added).)
- Claim 11 of the ‘473 Patent: “**control information**, for controlling **operation** of the second modem” and “**under control of the control information, the control information providing half duplex communications.**” (Ex. C at 20:39-21:15 (emphasis added).)

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some of the dependent claims include the further limitation that the control information be conveyed in information frames. (Ex. A at 21:51-54.) This demonstrates that the patentee was fully capable of claiming the control information being sent in a particular type of frame, and that the absence of such language in other claims implies that it is not a limitation of those claims.

Instead of “dictates,” the claims recite “in dependence upon,” “responsive to,” “for controlling,” “providing,” “to provide,” and “so that.” None of this claim language—which is ordinary grammar of the English language—needs construction, and it certainly would be improper to override each unique choice of claim language with Plaintiffs’ unsupported choice of “dictates.” Thus, Plaintiffs’ construction should be rejected because it seeks not to explain the scope of the claims but instead to improperly rewrite them with Plaintiffs’ own preferred, narrower language.

Moreover, Plaintiffs’ construction, and its implication that the control information can have absolute control over transmission, directly contradicts the teachings of the specification of the patent. The patent teaches that sometimes the devices may receive an “unexpected frame”—a frame that is not expected to be received by the device which supplies control information. (Ex. A at 16:10, Fig. 13 at 132.) If the device were truly capable of “dictat[ing]” the transmission of control information, such “unexpected frame[s]” could not occur.

In short, there is no reason to construe “control information,” as the claims themselves already provide sufficient meaning and context, and Plaintiffs’ “dictates” construction is clearly inappropriate.

7. **“supplying information packets . . . to the communications path in dependence upon the control information,” and**  
**“wherein the control information and the dependence on the control information . . . are arranged to avoid collisions . . . between information packets communicated from the first buffer to the second buffer and information packets communicated from the third buffer to the fourth buffer”**

Use in Claims	Plaintiffs' Proposed Construction	IWS's Proposed Construction
'895 Patent: 1	<p><u>“supplying information packets . . . to the communications path in dependence upon the control information”:</u></p> <p>providing information packets to the communications path under control of and in response to received control information</p>	<p>IWS contends that the plain and ordinary meaning in the field governs the construction of these terms. Moreover, these phrase should not be construed in its entirety as proposed by Plaintiffs. Rather, only words or terms that an ordinary juror could not understand should be construed.</p>
'895 Patent: 1	<p><u>“wherein the control information and the dependence on the control information . . . are arranged to avoid collisions . . . between information packets communicated from the first buffer to the second buffer and information packets communicated from the third buffer to the fourth buffer”:</u></p> <p>wherein information packets from the third buffer are supplied to the communications path only in response to control information so that a communication from the third buffer to the fourth buffer cannot occur when a communication from the first buffer to the second buffer is present on the communications path</p>	<p>For the purposes of jury comprehension, IWS proposes the following constructions:</p> <p><u>“information packets”</u>: <i>See above.</i></p> <p><u>“collision”</u>: The condition where transmissions on a channel overlap, preventing successful transmission.</p> <p><u>“buffer”</u>: A device or storage area used to temporarily store data sent or received over a network.</p>

The Court should reject Plaintiffs' improper attempt to wholly rewrite these claim limitations. Plaintiffs' proposed constructions are a naked attempt to import additional limitations into claim 1 of the '895 Patent that plainly do not appear in that claim. There are three primary claim construction disputes raised by Plaintiffs' proposed constructions. First, whether the Court should attempt to construe these long grammatical phrases at all, risking the potential of improperly rewriting the claims, or whether, as IWS contends, the Court should simply construe the particular words or phrases in them which a jury is not likely to understand. Second, as to both of these terms, Plaintiffs propose adding the limitation that devices can only transmit information on the network “in response to” received “control information.” Third, as to the second term, Plaintiffs attempt to rewrite the language of that term so that the phrase “to avoid collisions” becomes “so that a communication . . . cannot occur” “when [another] communication . . . is present on the communications path.” Both of these attempts to rewrite

the plain language of this claim and create additional limitations are improper, contrary to the claim's ordinary meaning, and contrary to the teachings of the specification.

**a. Plaintiffs Should Not Be Permitted to Rewrite the Claim's "Dependence" Limitations As "Only In Response To"**

As a threshold issue, nothing in the ordinary meaning of the word "dependence" means or implies "dependence" on only one thing. Under the ordinary meaning of the word "dependence," something can act "in dependence" on some condition or event without that condition or event completely and solely determining the outcome. For example, it is perfectly normal that a person may use their umbrella "in dependence" upon the weather. Of course, it is possible that the person may not feel well on a sunny day, and choose to spend that day in bed. That does not mean, however, that the person would have to open and use their umbrella indoors that day, lest they not be using their umbrella "in dependence upon the weather." Thus, under the ordinary meaning of "in dependence," a person can use their umbrella "in dependence" upon the weather even though the use of the umbrella is affected by a number of other conditions or events. Indeed, in patent law itself, it is expressly recognize that dependence may include dependence on more than one thing—a "multiple dependent" claim may depend on "more than one claim previously set forth and then specify a further limitation of the subject matter claimed." 35 U.S.C. § 112 ¶ 5(2006).

Moreover, Plaintiffs' construction violates the presumption of open-ended claims that applies where a "comprising" transitional is used between the preamble and body of the claim. Claim 1 of the '895 patent, the only claim where these terms appear, is a method claim with a "comprising" transitional. (Ex. A at 21:5-8.) As the Federal Circuit has repeatedly held, "[c]omprising' is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim." *Genentech, Inc. v. Chiron Corp.*, 112 F. 3d 495, 501 (Fed. Cir. 1997). Thus, presumptively the claim would cover methods where some "information packets from the third buffer are supplied to the communications path" without dependence on control information as long as some packets are "suppl[ied]" "from the third buffer to the communications path in

dependence upon the control information.” That is because, as a matter of law, “[t]he transition ‘comprising’ in a method claim indicates that the claim is open-ended and allows for additional steps.” *Invitrogen Corp. v. Biocrest Mfg., LP*, 327 F. 3d 1364, 1368 (Fed. Cir. 2003) (method claim which recited a method with a step of growing E. coli bacteria at a certain temperature and used a “comprising” transitional held to “allow[] activity, even activity that produces E. coli cell growth . . . not limited by the temperature range recited in” the claim).

“[A]bsent some special circumstance or estoppel which excludes the additional factor, infringement is not avoided by the presence of elements or steps in addition to those specifically recited in the claim.” *Vivid Technologies, Inc. v. American Science*, 200 F. 3d 795, 811 (Fed. Cir. 1999). No special circumstance or estoppel is present here. Indeed Plaintiffs do not even purport to rely on the prosecution history for these claim terms—thus, there is no estoppel. Moreover, the patent itself makes clear that the specific protocols which Plaintiffs rely on are exemplary and that “[v]arious modifications and extensions of this protocol . . . can be contemplated.” (Ex. A at 14:17-20.) Indeed, the patent itself, prior to the sections relied on by Plaintiffs, states that “[t]he following description of an example of the collision avoidance protocol . . . **assumes for simplicity and clarity that the master modem** 34 typically sends a single data frame followed by a control frame downstream . . . and that the slave modem waits for these downstream frames.” (Ex. A at 14:8-15.) Thus, the specification itself makes clear that this is not one of the unusual cases where it would be proper to narrow the scope of a claim with a “comprising” transitional.

Plaintiffs’ proposed construction is also inconsistent with the specification’s teaching that “the master modem 34 can be arranged to fall back to known modem communications methods . . . so that the same master modem can operate alternatively with slave modems as described above or with conventional modems.” (Ex. A at 10:15-20.) Thus, the patent expressly teaches that, in some cases, devices accessing the network will use modems other than “slave modems,” i.e. the devices will use modems which are not controlled at all, and thus do not transmit packets “only in response” to control information from the master modem.

Accordingly, as Plaintiffs' attempt to rewrite the claim such that transmission of packets from the third buffer occurs *only* in response to control information would needlessly exclude this embodiment and is without basis in the plain language of the claim.

**b. “[A]rranged To Avoid Collisions” Does Not Mean That Collisions “Cannot Occur”**

Plaintiffs' construction also rewrites the plain and simple language of the claim, which states that the “control information and dependence on the control information . . . are arranged to avoid collisions” (Ex. A at 21:30-37), to instead state that communications from the third buffer “cannot occur” “when a communication from the first buffer” “is present on the communications path.” Plaintiffs' rewriting of the claim’s “collision” limitation is inconsistent with the ordinary meaning of the claim, as well as the specification. Indeed, the plain meaning of “arranged to avoid collisions” indicates that the arrangement is designed with the purpose that collisions be avoided, but does not provide a guarantee that collisions are impossible. For example, the traffic lights at an intersection are “arranged to avoid collisions,” but that does not mean it is impossible for someone to confuse red with green, or to ignore the stop light entirely, and hit another car.

Certainly, although the specification repeatedly discusses the goal of “avoiding collisions,” which is present as a limitation in the claim, nowhere in the specification does it state the invention is so perfect that collisions on the communication path are impossible or “cannot occur.” Instead, the specification repeatedly teaches that there can be errors where data is not successfully received—which is what happens during a collision (Ex. D at 31)—and teaches how the various embodiments of the invention deal with such errors. (See, e.g., Ex. A at 4:21-28 (“The method can further comprise the steps of monitoring errors in communicating . . . and determining operations . . . in dependence upon monitored errors.”), 18:57-60.) One of the errors that the patent expressly teaches can occur is an “unexpected frame.” (Ex. A at 16:10, Fig. 13 at 132.) A frame is unexpected when it is sent at a time not designated by the control information—i.e. when the first buffer of the claim is supplying information packets to the communications path. Thus, Plaintiffs' construction would exclude from the claims

embodiments of the invention which experience the very type of errors described in the specification and is therefore plainly incorrect. *Accent Packaging, Inc. v. Leggett & Platt, Inc.*, 707 F.3d 1318, 1326 (Fed. Cir. 2013) (“a claim interpretation that excludes a preferred embodiment from the scope of the claim is rarely, if ever, correct”).

Also, as discussed above, the patent teaches that “the master modem 34 can be arranged to fall back to known modem communications methods . . . so that the same master modem can operate alternatively with slave modems as described above or with conventional modems.” (Ex. A at 10:15-20.) Plainly, when the “communications path” is operating “with conventional modems,” there is the potential for collisions to occur because, as the patent teaches, collisions are the norm for the most common networks. (See Ex. A at 1:25-28 (“Different technologies can be used to facilitate communications on any LAN and throughout the Network, **the most common being** Carrier Sense Multiple Access with **Collision Detection** (CSMA/CD) technology”) (emphasis added).) Plaintiffs’ proposed construction would improperly exclude this embodiment.

### c. IWS’s Plain Meaning Constructions Are Proper

Instead of construing these entire phrases, IWS proposes construing a handful of technical words in them for the jury’s understanding. IWS’s construction of “information packets” is discussed above in the “enveloping” terms. IWS’s ordinary meaning construction of “buffer” is clear from the specification (e.g., Ex. A at Figs. 12, 13, Col. 15:14-21.) IWS’s construction of collision is consistent with the term’s ordinary meaning. (Ex. D at 31, Ex. E at 9, § 3.143 (“collision: (1) The condition when multiple packets/signals are observed simultaneously at a single point on the medium where the “listening” station is unable to function properly due to multiple signals being present. . . . (2) A condition that results from concurrent transmissions from multiple signal sources.”).)

## 8. “control unit”

Use in Claims	Plaintiffs’ Proposed Construction	IWS’s Proposed Construction
‘895 Patent: 48	a unit that performs the necessary conversion between the Ethernet frames and the ECAP data frames, and generates and responds to the ECAP control and response frames	IWS contends that the plain and ordinary meaning in the field governs the construction of this term.
‘264 Patent: 5, 8		Moreover, this phrase should not be construed at all because an ordinary juror can understand all of the words in it, which are ordinary words in the English language.
‘473 Patent: 30		

Plaintiffs’ construction of “control unit” plainly seeks to improperly import a limitation of the preferred embodiment—that the control unit converts frames into an “ECAP” format. IWS does not contest that the “control unit” is responsible for conversion of the format of data transmitted between the “communications path” portion of the network and the “CSMA/CD path” portion of the network. However, nothing in the claims requires that the data transmitted on the “communications path” be in an “ECAP format.”<sup>5</sup> None of Plaintiffs’ evidence—all citations to figures of various embodiments or descriptions of various embodiments in the “Detailed Description” portion of the patent—overcome the presumption that this term carries its ordinary and customary meaning. (No. 13-cv-492, Dkt. No. 41 at 13-14.)

Indeed, each of the claims themselves already describes what the “control unit” is and does. For example, claim 48 of the ‘895 patent explains that “the control units of the first and second units are arranged to exchange control information via the communications path for communicating information packets bidirectionally via the communications path between the buffers of the first and second units in a half duplex manner.” (Ex. A at 26:5-10.) No further construction or explanation of “control unit” is needed beyond what is already in the claims.

Moreover, “ECAP” is not a term known and used in the art, but rather a specific term apparently created by the inventors of the patents-in-suit to describe a particular embodiment of the invention. (Ex. A at 9:32-38 (“Communications between the master modem 34 and the slave

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<sup>5</sup> IWS also disagrees that the “CSMA/CD path” is limited to Ethernet frames, as demonstrated by IWS’s proposed construction for “CSMA/CD,” discussed above. (*Supra* at 4.)

modem 32 are carried out in accordance with a new point-to-point protocol which uses collision avoidance to communicate Ethernet frames between the modems. This protocol is described below and for convenience is referred to herein as ECAP (Ethernet frame Collision Avoidance Protocol.”)) Notably, the inventors did not choose to describe the metes and bounds of their invention in terms of “ECAP” frames—“ECAP” does not appear in *any* of the claims of *any* of the patents-in-suit. Instead, the inventors made clear that ECAP was just a useful term for discussing the “[v]arious modifications and extensions of [the] protocol [which] can be contemplated.” (Ex. A at 14:17-20; *see id.* at Figs. 9-11.)

Indeed, the specification describes a number of different “ECAP” formats, including:

- “Thus as shown in FIG. 9 the Ethernet fame is enveloped, intact and without any change, within the ECAP frame.” (Ex. A at 13:11-13.)
- “Alternatively, as illustrated in FIG. 10, the preamble and SFD fields can be stripped from the Ethernet frame and only the remainder of the Ethernet frame (i.e. the data packet and FCS field) incorporated into the ECAP frame between the overhead field O/H and the check sequence CHK.” (*Id.* at 13:14-18.)

Thus, not only does “ECAP” lack any meaning in the art, Plaintiffs fail to even make clear to which of these “ECAP” frames described in the specification their construction refers. Because Plaintiffs’ proposed construction improperly imports a limitation from the preferred embodiments of the specification into the claims, and because it would only render the claims more uncertain, it should be rejected.

**9. “control unit is responsive to control information, from another apparatus coupled to the communications path”**

Use in Claims	Plaintiffs’ Proposed Construction	IWS’s Proposed Construction
<u>‘264 Patent:</u> 8	the control unit permits the supply of information to the communications path only in response to control information received by the control unit	IWS contends that the plain and ordinary meaning in the field governs the construction of this term. Moreover, this phrase should not be construed at all because an ordinary juror can understand all of the words in it, which are ordinary words in the English language.

Once again, Plaintiffs propose to construe the claims to improperly read in an additional limitation that transmission be “only in response to” received control information. This is the

same issue addressed above in the term “supplying information packets . . . to the communications path in dependence upon the control information.” (*Supra* at 18.) The same reasons apply here for rejecting Plaintiffs’ proposed construction of this term and IWS incorporates those arguments by reference herein.

Moreover, the differences in language between this claim and claim 1 of the ‘895 patent do not counsel a different result. Although the control unit of this claim “is responsive” to control information, that does not mean that the control unit permits the supply of information “only in response to” control information. That the control unit is responsive to control information merely indicates that the control unit responds to control information, not that the control unit is “only” responsive to control information. Plaintiffs’ transparent attempt to improperly affix an “only” limitation into this claim should be rejected.

**10. “half duplex communications” / “half duplex manner” / “using half duplex communications controlled by the first modem” / the half duplex communications are MAC-layer half-duplex such that . . .”**

Use in Claims	Plaintiffs’ Proposed Construction	IWS’s Proposed Construction
‘895 Patent: 48	<u>“half duplex communications”</u> / <u>“half duplex manner”</u> :	IWS contends that the plain and ordinary meaning in the field governs the construction of these terms.
‘264 Patent: 5,8	The phrases “half duplex communications” and “half duplex manner” in these broader phrases should be construed to mean “form of communication in which communication signals are provided to the communications path so that information is traveling on the communications path in only one direction at any given moment in time.”	Moreover, these phrases should not be construed in their entirety as proposed by Plaintiffs. Rather, only words or terms that an ordinary juror could not understand should be construed.
‘473 Patent: 1, 2, 11, 26, 30, 35, 36	<u>“using half duplex communications controlled by the first modem”</u> :         where the information is traveling on the path in only one direction at a time and under control of the first modem	For purposes of jury comprehension, IWS proposes the following construction: <u>“half duplex”</u> : Transmission in either direction on a channel, but only in one direction at a time. <u>“information packets”</u> : <i>See above</i> . <u>“bidirectional”</u> / <u>“bidirectionally”</u> : <i>See above</i> .
‘473 Patent: 1, 35		

Use in Claims	Plaintiffs' Proposed Construction	IWS's Proposed Construction
<p><u>‘473 Patent:</u> 35</p>	<p><u>“the half duplex communications are MAC-layer half-duplex such that once information corresponding to a first MAC-layer packet grouping of data has begun to be transmitted into the bidirectional communications path the information corresponding to the first MAC-layer packet grouping of data is completely transmitted into the bidirectional communications path before information corresponding to a second MAC-layer packet grouping of data is allowed to begin to be transmitted into the bidirectional communications path”:</u>  once a frame has begun to be transmitted on the communications path, the transmission must be received at the other end of the path before a second frame can be transmitted in the opposite direction on the communications path</p>	<p><u>“MAC-layer” / “MAC layer”:</u> See below.</p>

There are two central disputes raised by these terms. The first issue is whether “half duplex manner” and “half duplex communications” mean that the system has to perfectly transmit in a half duplex way at all times without errors or collisions, as Plaintiffs’ constructions suggest. The second issue is whether the half duplex limitation applies to the place and moment of transmission or whether it is a limitation on the entire communications path for the entire duration of the transmitted information’s transit through the communications path.

IWS contends that only the term “half-duplex” need be construed and that no further construction of “half-duplex manner” and “half-duplex communications” are needed because the ordinary meaning of those terms does not include the additional limitations sought by Plaintiffs. IWS’s construction of “half-duplex” is consistent with the ordinary meaning of half-duplex. For example, IEEE’s 1995 Standard Glossary of Computer Networking Terminology defines “half-duplex (HD OR HDX) transmission” as “transmission in which data may be sent in either direction but only in one direction at a time on a transmission medium” (Ex. E at 19, § 3.368.)

This demonstrates that, in networking, “half duplex” is concerned with transmission, not the ultimate conveyance of information over an entire network path.

The specification record confirms that the half-duplex features are concerned with the control of transmission at a *particular time and place*, not the entire period of transit of information over the entire path. For instance, the specification describes an embodiment:

Briefly, this communication involves half-duplex **transmission** using a collision avoidance protocol (ECAP) in which the master modem 34 has priority and control over the slave modem 32. Thus the master modem 34 determines **when to send** information downstream via the line 12, and informs the slave modem **when it is permitted to send** information upstream via the line 12.

(Ex. A at 12:42-52 (emphasis added).) Thus, the specification describes “half-duplex transmission” in terms of a particular device making a particular determination whether or not to send information. This makes sense because, due to the inherent propagation delay in sending information over a medium, neither modem can actually know what is currently being transmitted on the other end of the medium—it has to wait to receive that information. Thus, at the time a device makes a transmission, it cannot be sure, at a physical level, that the other device is not, in error, sending data at the same time, resulting in a collision. Instead, at best, a device simply can know that, under the protocol, the other device *should not* be sending information at a particular time, not whether they actually are sending information.

Similarly, as discussed above regarding the “wherein the control information and the dependence on the control information . . . are arranged to avoid collisions . . .” limitation, the specification of the patents makes clear that it is only a goal to reduce collisions and errors, not that the system renders such collisions and errors impossible. Indeed, the patent expressly discusses an “unexpected frame” error, receiving a frame when it is not expected. (*Supra* at 22.) If the system could control transmission in a perfect half-duplex manner, it could ensure perfect control of when information is sent and ensure that no information is ever sent in error. However, the “unexpected frame” error clearly demonstrates that is not the case.

Thus, IWS respectfully requests that the Court reject Plaintiffs’ proposed constructions and adopt IWS’s construction of half-duplex.

**11. “master modem” / “slave modem”**

Use in Claims	Plaintiffs’ Proposed Construction	IWS’s Proposed Construction
‘473 Patent: 26	<p>“<u>master modem</u>”: a modem at a first end of the bidirectional communications path that controls how all communications are supplied to the path</p> <p>“<u>slave modem</u>”: a modem at a second end of the bidirectional communications path that supplies information to the path only in response to control information received from the master modem</p>	<p>For purposes of jury comprehension, IWS proposes the following constructions:</p> <p>“<u>master modem</u>”: A modem having control over other modem(s).</p> <p>“<u>slave modem</u>”: A modem which is controlled by a master modem.</p>

Again, IWS has proposed straightforward constructions of these terms consistent with their ordinary meaning and the disclosure of the specification. Also once again, Plaintiffs propose to construe the claims to improperly read in an additional limitation into “slave modem” that transmission be “only in response to” received control information. Similarly, Plaintiffs read in that the master modem controls “all communications.” Both of these constructions raise the same issue addressed above in the briefing on the term “supplying information packets . . . to the communications path in dependence upon the control information” (*Supra* at 18,) as well as the term “control unit is responsive to control information, from another apparatus coupled to the communications path” (*Supra* at 25.) The same reasons apply here for rejecting Plaintiffs’ proposed construction of this term and IWS incorporates those arguments by reference herein.

Indeed, the claim itself is perfectly clear about the relationship between the master and slave modem: “the master modem controls the slave modem by control information communicated via the bidirectional communications path so that communications of at least the information corresponding to the Ethernet frames on the bidirectional communications path take place in a half-duplex manner.” (Ex. C at 22:63-23:2.) Despite this detailed description of the relationship between the master and slave modem, nowhere in the claim is there a limitation that the slave modem can transmit “only” in response to received control information or that the master modem controls “all” communications. Thus, the Court should reject Plaintiffs’ improper attempt to read in additional limitation of the slave and master modems.

On the other hand, IWS's proposed construction of these terms is consistent with the specification and their well understood meaning in the art. The patent's description of the relationship of the slave and master modem is quite simple: "the master modem 34 has priority and control over the slave modem 32. Thus the master modem 34 determines when to send information downstream via the line 12, and informs the slave modem when it is permitted to send information upstream via the line 12." (Ex. A at 12:48-52.) Thus, the use of these terms in the patent is consistent with the well understood meaning in the computer and networking fields that "master" and "slave" refers to a general concept of control rather than a specific implementation where a slave can transmit "only" in response to received control information. For example, IEEE's 1995 Standard Glossary of Computer Networking Terminology defines "master station" as "[a] station that controls other terminals sharing multiple-access transmission medium on a multi-point circuit." (Ex. E at 25, § 3.503.) Similarly, the IEEE's 1994 Standard Glossary of Computer Hardware Terminology defines "bus master" as "[a] device connected to a bus which controls all other devices connected to the same bus. Note: The bus master controls which slave devices may, and when they may, place data on the bus." (Ex. F at 13, § 3.239.) In that same dictionary, the primary definition of "bus slave" is "[a] device which responds to signals on a bus." (*Id.* § 86, 3.2058.)

Thus, the patent's specification and the ordinary meaning in the art all indicate that a "master modem" merely need have control over a "slave modem," and that those terms are not limited to the specific implementation of the master modem controlling "all" communications and the slave modem transmitting "only" in response to received control information. For example, a master modem could control a slave modem by sending control information that allows the slave modem to transmit data. Alternatively, a master modem could control a slave modem by sending control information that precludes the slave modem from transmitting data. Plaintiffs' proposed construction seeks to exclude the second scenario from the scope of the claim. However, both of these scenarios are consistent with the teachings of the specification and the well understood meaning in the art that a master modem must simply control the slave

modem, including how and when it sends data, but do not require a specific implementation for how that control is performed. Plaintiffs provide no basis for so unduly narrowing the scope of the claim to this particular implementation.

**12. “multiplexing the modem” / “multiplexing signals of the first modem” / “multiplexer . . . for multiplexed connections via respective buffers to respective communication paths”**

Use in Claims	Plaintiffs' Proposed Construction	IWS's Proposed Construction
'895 Patent: 12, 20	<p><u>“multiplexing the modem”</u>:</p> <p>This phrase is insolubly ambiguous in view of the claims and in the context of the specification and therefore incapable of construction.</p>	<p>IWS disagrees that any of these terms are insolubly ambiguous. IWS contends that the plain and ordinary meaning in the field governs the construction of each of these terms. Moreover, these phrases should not be construed in their entirety as proposed by Plaintiffs. Rather, only words or terms that an ordinary juror could not understand should be construed.</p>
'473 Patent: 5, 20	<p><u>“multiplexing signals of the first modem”</u>:</p> <p>The phrase “signals of the first modem” is insolubly ambiguous in the context of the claim and in view of the specification and therefore incapable of construction.</p> <p>To the extent that this phrase is capable of construction, it should be construed as “combining [signals of the first modem] for transmission as a single signal”.</p>	<p>For the purposes of jury comprehension, IWS proposes the following constructions:</p> <p><u>“multiplexing” / “multiplexed”</u>:</p> <p>Techniques for transmitting two or more signals over a channel, such as interleaving transmissions or subdividing a common channel.</p> <p><u>“buffers”</u>: See above.</p>
'895 Patent: 51	<p><u>“multiplexer . . . for multiplexed connections via respective buffers to respective communication paths”</u>:</p> <p>device for combining the information packets received by the first unit from multiple communications paths, each path associated with a connection and buffer in the first unit</p>	

Plaintiffs argue that the phrases “multiplexing the modem” and “multiplexing signals of the first modem” are indefinite. To invalidate a claim for indefiniteness, clear and convincing evidence must be presented. *Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1376 (Fed. Cir. 2001). A claim is only indefinite if it is insolubly ambiguous and not amenable to construction. *Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 537 F.3d 1357, 1371 (Fed. Cir. 2008). Plaintiffs do not meet this high threshold.

IWS's proposed construction of "multiplexing" is consistent with the plain and ordinary meaning to one of ordinary skill in the art and demonstrates that none of these terms are indefinite. Simply put, multiplexing means transmitting multiple signals over a channel. (*See, e.g.*, Ex. E at 26, § 3.537 (defining multiplexing as "Subdivision of a common channel to make two or more channels by splitting the frequency band transmitted by the common channel into narrower bands, by allotting this common channel to several different information channels, or by other means, one at a time"); Ex. F at 59, § 3.1399 (defining multiplex as "To interleave or simultaneously transmit two or more messages on a signal channel.").) In the context of the patents-in-suit, multiplexing refers to a single master modem at one end of a communication path communicating with multiple slave modems, each at the end of their own separate communication path. (Ex. A at 22:19-23, 14:26-36.)

Indeed, there is nothing indefinite about the terms "multiplexing the modem" or "multiplexing signals of the first modem." The specification describes this functionality in several locations. (*See, e.g.*, Ex. A at 14:26-36 ("[T]he master modem 34 can provide multiplexed operations for a plurality of slave modems, so that in practice the transmitting and receiving processes can take place simultaneously and independently in a multiplexed manner.").) The specification also describes one way of carrying out that multiplexing according to some of the preferred embodiments: time compression multiplexing, which works by "ensuring that the communications in the two directions take place at different times." (Ex. A at 3:47-53.) Given this disclosure, the claims are not insolubly ambiguous.

Plaintiffs' proposed alternative narrow construction for "multiplexing signals of the first modem" improperly adds the limitation that the signals be combined into a *single signal*. This is inconsistent with the ordinary meaning of "multiplexing" which includes "subdivision" of a channel to "allocat[e]" it "to several different information channels." That is, the ordinary meaning of "multiplexing" includes dividing a channel to send several signals separately at the same time, and does not require "combining [signals] for transmission as a single signal." Indeed, the specification itself discloses other multiplexing techniques which would appear to

not fall within Plaintiffs' construction, such as time compression multiplex communications, because they arguably do not combine signals into a single signal. (See, e.g., Ex. A at 3:47-53 (describing time compression multiplex communications as ensuring that multiple signals are transmitted at different times).) Similarly, with the term "multiplexer . . . for multiplexed connections via respective buffers to respective communication paths," Plaintiffs again try to read in a narrowing limitation on multiplexing. The specification clearly contemplates a form of multiplexing that involves interleaving rather than combining signals. (See Ex. A at 3:47-53.)

For the same reasons, Plaintiffs' construction of "multiplexer . . . for multiplexed connections via respective buffers to respective communication paths" is improper because it requires "combining the information packets received." Nothing about multiplexing requires combining. Additionally, contrary to Plaintiffs' construction of this term, nothing in the claim or specification states that the multiplexing occur at the level of "information packets" rather than frames or raw signals, only that the information is passed through buffers.

Thus, the Court should adopt IWS's proposed construction of "multiplexing" and reject Plaintiffs' proposed constructions of these terms.

**13. "MAC-layer packet grouping of data that is grouped to fit into one MAC-layer packet of CSMA/CD networks"**

Use in Claims	Plaintiffs' Proposed Construction	IWS's Proposed Construction
'473 Patent: 1, 11, 26, 30, 35	This phrase is insolubly ambiguous in the context of the claim and in view of the specification and therefore incapable of construction.	<p>IWS disagrees that this phrase is insolubly ambiguous. IWS contends that the plain and ordinary meaning in the field governs the construction of this term.</p> <p>For the purposes of jury comprehension, IWS proposes the following constructions:</p> <p><u>"MAC-layer"</u> / <u>"MAC layer"</u>: The layer of a network which provides functions between the physical layer and the logical link control layer, including controlling access to the communication channel(s).</p> <p><u>"packet"</u>: A unit of data for transmission over networks of some finite size which may be transmitted</p>

Use in Claims	Plaintiffs' Proposed Construction	IWS's Proposed Construction
		over a network by being enveloped in one or more frames. “ <u>CSMA/CD</u> ”: <i>See above</i> .

Plaintiffs again fail to meet their weighty burden of demonstrating by clear and convincing evidence that this term is insolubly ambiguous and therefore invalid as indefinite. Indeed, the specification of the patent provides the meaning of the term “MAC-layer”:

“The OSI (Open Systems Interconnection) reference model established by the ISO defines packetized communications protocols in seven layers . . . Layer 2 is the data link layer which is concerned with sending and receiving blocks of data together with information for example for synchronization and error and flow control. For LANs, the data link layer is generally considered as comprising two sub-layers, referred to as the LLC (logical link control) layer and the MAC (medium access control) layer. . . . The CSMA/CD Standards address communications at the MAC and physical layers (Layers 2 and 1).”

(Ex. A at 1:46-60.) The patent also teaches that certain communications and network functions can occur at the MAC layer. (*See, e.g.* Ex. A at Figs. 2, 9, 10, and 11; 1:26-45, 1:54-60, 3:57-61, 7:19-38, 7:44-65, and 9:24-28.) Finally, the patent also teaches that transmissions can be grouped together: “refinements can include provisions for sending multiple data frames successively in either direction as described above, concatenating or merging control and/or data frames sent in the same direction.” (*Id.* at 17:31-35.) Thus, it is not apparent what Plaintiffs believe is indefinite about this term. Although the technical nature of this phrase may be difficult for a lay jury to understand, the individual terms are capable of ready definition, and the phrase is not insolubly ambiguous. Thus, the Court should adopt IWS’s constructions and reject Plaintiffs’ argument that this term is indefinite.

**14. “changing direction of communication of MAC layer groupings of information . . . after the completion of transmission of the information corresponding to the first information packet”**

Use in Claims	Plaintiffs' Proposed Construction	IWS's Proposed Construction
‘473 Patent: 40	changing direction of flow of frames on the communications path only after a transmitted frame has been received at the other end of the communications path	IWS contends that the plain and ordinary meaning in the field governs the construction of this term. Moreover, this phrase should not be construed in its entirety as proposed by Plaintiffs. Rather, only words or

Use in Claims	Plaintiffs' Proposed Construction	IWS's Proposed Construction
		<p>terms that an ordinary juror could not understand should be construed.</p> <p>For the purposes of jury comprehension, IWS proposes the following constructions:</p> <p><u>“MAC-layer”</u> / <u>“MAC layer”</u>: <i>See</i> above.</p> <p><u>“information packet”</u>: <i>See</i> above.</p>

Plaintiffs' proposed construction can be rejected by the plain language of the claim. The claim says “after the completion of transmission.” It does not say “after the completion of reception.” Nothing supports Plaintiffs' attempt to alter the clear claim language.

Similarly, Plaintiffs' attempt to insert the word “only” into the construction is also improper. The claim says “after the completion of transmission of the information corresponding to the first information packet,” it does not say “*only* after the completion of transmission of the information corresponding to the first information packet.” Once again, this commits the “cardinal sin” of importing limitations from preferred embodiments into the claims. Moreover, as discussed above, because claim 40 of the ‘473 Patent is a method claim with a “comprising” transition, it is presumed to permit additional steps, beyond the recited steps, including a step of “changing direction of communication of MAC layer groupings of information” at a time other than “after the completion of transmission of the information corresponding to the first information packet.” *See Invitrogen Corp. v. Biocrest Mfg., LP*, 327 F. 3d 1364, 1368 (Fed. Cir. 2003) (method claim which recited a method with a step of growing E. coli bacteria at a certain temperature and used a “comprising” transitional held to “allow[] activity, even activity that produces E. coli cell growth . . . not limited by the temperature range recited in” the claim).

## V. CONCLUSION

IWS respectfully requests that the Court adopt IWS's proposed constructions and reject Plaintiffs' proposed constructions.

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Respectfully submitted,

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**CERTIFICATE OF SERVICE**

The undersigned certifies that the foregoing document was filed electronically in compliance with Local Rule CV-5. As such, the foregoing was served on all counsel of record via the Court's ECF Systems on March 4, 2014.

/s/ Jonathan Baker

Jonathan Baker